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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,239	02/23/2004	Yong-Ho Yang	1190860-991260	1042
26379	7590	10/11/2005	EXAMINER	
DLA PIPER RUDNICK GRAY CARY US, LLP 2000 UNIVERSITY AVENUE E. PALO ALTO, CA 94303-2248			QI, ZHI QIANG	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/785,239	YANG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Mike Qi	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 3,11,12,14-16,20,23 and 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-10,13,17-19,21 and 22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

Claims 3, 11-12, 14-16, 20 and 23-24 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claims, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on Sep.12, 2005.

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-10, 13, 17-19, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0214621 A1 (Kim et al).

Regarding claims 1, 8, 18 and 21, Kim discloses (paragraphs 0054-0061; Figs.9 and 11) a liquid crystal display comprising:

- substrate (90) and a capacitor (the storage electrode 73 and the metal film 60a forming a capacitor with an insulating layer 66);
- spacer (84);
- dielectric layer (76 as an insulating material of the protective layer) on the substrate (90);
- contact hole (88) extending through the dielectric layer (76).

Although the Fig.9 described lower (second) member, the Fig.11 described the upper (first) member that comprises upper substrate (101) and common electrode (106), such that the spacer must be positioned between the upper (first) member and the capacitor or between the upper (first) member and the contact hole (88) for forming the cell gap, and the liquid crystal being positioned in the cell gap. Such spacer arrangement would keep the spacer having desired height (see paragraph 0061) so as to keep the liquid crystal having uniform cell gap.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to modify the liquid crystal display with the teachings of the spacer arrangement such as spacer being positioned between the first member and the capacitor as taught by Kim, since the skilled in the art would be motivated for keeping the spacer having desired height (see paragraph 0061).

Regarding claims 2, 4-7, 9-10,13, 17, 19, and 22, Kim discloses (paragraphs 0054-0061; Figs.9, 11) a liquid crystal display comprising:

- second electrode (pixel electrode 78) positioned on the capacitor (the storage electrode 73 and the metal film 60a forming a capacitor with an insulating layer 66); wherein the spacer (84) is adjacent to the first and second electrodes (common electrode and pixel electrode);
- dielectric layer (76 as an insulating material of the protective layer) deposited on the capacitor, a contact hole (88) formed above the capacitor and coupled to the capacitor and extending through the dielectric layer (76); and a second electrode (pixel electrode 78) formed in the contact hole (88) and positioned

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- on the dielectric layer (76); wherein the spacer (84) is positioned adjacent to a portion of the second electrode (78) that is located in the contact hole (88), and extends into the contact hole (88);
- thin film transistor (64,72,74); and a second electrode (78) for electrically coupling the thin film transistor to the capacitor;
  - the spacer (84) is a column spacer;
  - the capacitor is located in a noneffective display area with no light transmission as shown in Figs.9 and 11;
  - a black matrix (102) positioned near the spacer (108) (when forming the liquid crystal display device, the spacer 108 and the spacer 84 should constitute one spacer) to prevent the spacer from affecting an image projection.

### ***Conclusion***

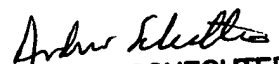
3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (571) 272-2299. The examiner can normally be reached on M-T 8:00 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Qi  
October 5, 2005

  
ANDREW SCHECHTER  
PRIMARY EXAMINER